

**ABSTRACT OF THE DISCLOSURE**

A technique is provided for segmenting a structure of interest from a volume dataset. The technique identifies regions of the structure using templates having characteristics of the structure of interest. The identified regions may then undergo a constrained growth process using dynamic constraints that may vary based on local statistics associated with the identified structure regions. Edges within the volume may be determined using gradient data determined by evaluating the strongest gradient between each pixel and all adjacent pixels. The edge data may be used to prevent the constrained growing process from exceeding the boundaries of the structure of interest.

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